

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of: HILL, et al.

Examiner: TBA
(Parent: John D. Pak)

Serial No.: TBA (Parent: 09/673,187)

Docket No.: 50508-1061

Filing Date: January 29, 2004 (Parent: December 4, 2000)

For: **Methods for Removing A Contaminant
By A Polyoxometalate-Modified Fabric or a
Polyoxometalate-Modified Cellulosic Fiber
and Fabrics Thereof**

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

This information disclosure statement is filed in accordance with 37 C.F.R. §§ 1.56, 1.97, and 1.98, and specifically:

- ☒ under 37 CFR 1.97(b), or
(within Three months of filing national application; or date of entry of international application; or before
mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97(c) together with either a:
☐ Statement Under 37 C.F.R. 1.97(e), or
☐ a \$180.00 fee under 37 CFR 1.17(p), or
(After the CFR 1.97(b) time period, but before the final office action or notice of allowance, whichever
occurs first)
- ☐ under 37 CFR 1.97(d) together with a:
☐ Statement under 37 CFR 1.97(e), and
☐ a \$180.00 petition fee set forth in 37 CFR 1.17(p).
(Filed after final office action or notice of allowance, whichever occurs first, but before payment of the
issue fee)

Enclosed is a check in the amount of \$

Enclosed is Credit Card Payment Form (PTO-2038) in the amount of \$

Please charge \$ to deposit account . At any time during the pendency of this application, please charge any
fees required to Deposit Account 20-0778 pursuant to 37 CFR 1.25. The Commissioner is hereby requested to credit any
overpayment to Deposit Account No. 20-0778.

- ☒ Applicant(s) submit herewith *Form PTO 1449A - Information Disclosure Statement by Applicant* together with copies
(where required) of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s)
may or may not be material to the examination of this application and for which there may be a duty to disclose in
accordance with 37 CFR 1.56. As required by 37 C.F.R. §1.98(a), a legible copy of each document is provided.

- ☐ A concise explanation of the relevance of foreign language patents, foreign language publications and
other foreign language information listed on PTO Form 1449, as presently understood by the individual(s) designated in 37
CFR 1.56(c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is
cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language
version of the search report or action which indicates the degree of relevance found by the foreign office is listed on the form

PTO 1449 and is enclosed herewith.

The following rights are reserved by the Applicant(s): the right to establish the patentability of the claimed invention over any of the listed documents should they be applied as reference, and/or the right to prove that some of these documents may not be prior art, and/or the right to prove that some of these documents may not be enabling for the teachings they purport to offer.

This statement should not be construed as a representation that an exhaustive search has been made, or that information more material to the examination of the present application does not exist. Any statements or identifications regarding the relevance of any portion(s) of cited references should not be construed as a representation that the most relevant portion(s) have been identified, and the absence of such statements or identifications should not be construed as representations that there are no relevant portion(s). The Examiner is specifically requested not to rely solely on the materials submitted herewith. The Examiner is requested to conduct an independent and thorough review of the documents, and to form independent opinions as to their significance.

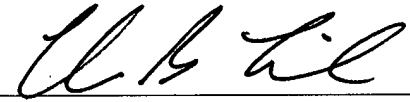
This is a Divisional of Application No.: 09/673,187. All patents, publications and articles listed on the attached Form PTO-1449 are available in the Parent Application file.

It is requested that the information disclosed herein be made of record in this application and that the Examiner initial and return a copy of the enclosed PTO-1449 to indicate the documents have been considered.

Respectfully Submitted,

**THOMAS, KAYDEN, HORSTEMEYER
& RISLEY, L.L.P.**

By:

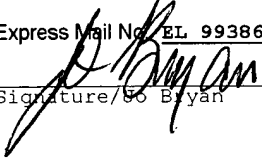

Christopher B. Linder, Reg. No. 47,751

100 Galleria Parkway, Suite 1750
Atlanta, Georgia 30339-5948
770-933-9500

EXPRESS MAIL

I hereby certify that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office to Addressee" in an envelope addressed to: Commissioner for Patent, Mail Stop Patent Application, P.O. Box 1450, Alexandria, VA, on January 29, 2004.

Express Mail No. EL 993860021 US


Signature/US Bryan

Form PTO-1449

Attorney Docket No.
050508-1061Serial No.
**TBA (Parent
09/673,187)****INFORMATION DISCLOSURE CITATION***(Use several sheets if necessary)*Applicant
Hill, et al.Filing Date
January 29, 2004Group
Unassigned**U.S. PATENT DOCUMENTS**

Examiner Initials	Item	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	A	3,387,916	06/11/68	Clarke			
	B	3,504,997	04/07/70	Clapham			
	C	3,925,006	12/09/75	Forschirm, et al.			
	D	3,947,332	03/30/76	Vanderpool, et al.			
	E	4,186,243	01/29/80	Astbury, et al.			
	F	4,444,592	04/24/84	Ludwig			
	G	4,639,432	01/27/87	Holt, et al.			
	H	4,714,482	12/22/87	Polak, et al.			
	I	4,870,010	09/26/89	Hayes			
	J	5,071,877	12/10/91	Bannard, et al.			
	K	5,093,134	03/1992	Murrer, et al.	424	617	
	L	5,292,558	03/08/94	Heller, et al.			
	M	5,356,469	10/18/94	Jenkins, et al.			
	N	5,603,927	02/18/97	Fukumoto, et al.			
	O	5,607,979	03/04/97	McCreery	514	759	05/30/95
	P	5,824,706	10/1998	Schinazi, et al.	514	492	
	Q	5,851,948	12/22/98	Chuang, et al.			
	R	5,908,647	06/01/99	Golightly, et al.			
	S	5,914,436	06/22/99	Klabunde, et al.	588	205	01/16/96
	T	5,928,382	07/27/99	Reinhardt, et al.			
	U	5,990,373	11/23/99	Klabunde	588	200	08/19/97
	V	6,020,369	02/2000	Schinazi, et al.	514	492	
	W	6,057,488	05/02/00	Koper, et al.	588	200	09/15/98
	X	6,224,885	05/01/01	Jenner, et al.	424	401	05/16/97
	Y	6,414,039	07/2002	Braue, et al.	514	759	
	Z	6,420,434	07/16/02	Braue, Jr., et al.	514	759	06/01/01
	AA	2003/0049330	03/2003	Hill, et al.			
	AB	2003/0072811	04/2003	Hill, et al.			
	AC	2003/0216256	11/2003	Axtell, et al.	502	417	
	AD	2003/0220195	11/2003	Axtell, et al.	502	417	

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
	AE	1,037,990	09/03/66	Great Britain				
	AF	1,385,489	02/1975	Great Britain				
	AG	EP 242296A	10/21/87	Europe				
	AH	EP 271337A	06/15/88	Europe				
	AI	EP 426124A2	05/08/91	Europe				
	AJ	DE 300641A	06/25/92	Germany				
	AK	DE 30001657A1	11/26/81	Germany				
	AL	JP 08296031	11/12/96	Japan				
	AM	JP 4035716	02/06/92	Japan				
	AN	JP 4054127A	02/12/92	Japan				
	AO	JP 46036516		Japan				
	AP	JP 50136488	10/29/75	Japan				
	AQ	JP 51791788	07/20/93	Japan				
	AR	JP 61185568	08/19/86	Japan				
	AS	JP 62013464	01/22/87	Japan				
	AT	JP 6815758	03/11/68	Japan				
	AU	JP 7251075	10/03/95	Japan				
	AV	SU 1783323	12/23/92	Soviet Union				
	AW	SU 801674	07/19/79	Soviet Union				
	AX	SU 834280		Soviet Union				
	BY	WO 9203511A	03/05/92	PCT				
	BZ	WO 94/20565	09/15/94	PCT				
	BA	WO 97/14401	04/24/97	PCT				
	BB	WO 99/53131	10/21/99	PCT				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	BC	Chemical Abstracts 131:234039 (1999)
	BD	Chemical Abstracts 128:27274 (1997)
	BE	Holleman, et al., "Lahrbuch der Anorganischen Chemie", Walter de Gruyter, pp. 1097-1099, 1105-1106 (1985). German
	BF	Gall, et al., "Selective Oxidation of Thioether Mustard (HD) Analogs by <i>tert</i> -Butylhydroperoxide Catalyzed by H ₅ PV ₂ Mo ₁₀ O ₄₀ Supported on Porous Carbon Materials", Journal of Catalysis 159, 473-478 (1996)
	BG	Gall, et al., "Role of Water in Polyoxometalate-Catalyzed Oxidations in Nonaqueous Media. Scope, Kinetics, and Mechanism of Oxidation of Thioether Mustard (HD) Analogs by <i>tert</i> -Butyl Hydroperoxide Catalyzed by H ₅ PV ₂ Mo ₁₀ O ₄₀ ", Inorg. Chem. 1994, 33, pages 5015-5021, 1994.
	BH	Hulea, et al., "Thioether Oxidation by Hydrogen Peroxide Using Titanium-Containing Zeolites As Catalysts", Journal of Molecular Catalysis A: Chemical 111, 325-332 (1996).

BI	Walmsley, "Synthesis of A Heteropolytungstate and Its Use in Outer-Sphere Redox Kinetics", Journal of Chemical Education, Vol. 69, Number 11, 936-938 (1992).
BJ	Harrup, et al., "Polyoxometalate Catalysis of the Aerobic Oxidation of Hydrogen Sulfide to Sulfur", Inorg. Chem., 33, 5448-5455 (1994)
BK	Hill, et al., "The First Combinatorially Prepared and Evaluated Inorganic Catalysts. Polymetates For The Aerobic Oxidation of the Mustard Analog Tetrahydrothiophene (THT)", Journal of Molecular Catalysis A: Chemical 114, pages 103-111, (1996)
BL	Riley, et al., "Selective Molecular Oxygen Oxidation of Thioethers to Sulfoxides Catalyzed by Ce(IV)", Journal American Chemical Society, 110, pages 177-180 (1988)
BM	Zeng, et al., "Catalytically Decontaminating Dendrimers. Poly-Tris Arborols Covalently Functionalized with Redox Active Polyoxometalates", Proc. Erdec Sci. Conf. Chem. Biol. Def. Res., pp. 351-357, November 1997.
BN	Johnson, et al., "CW-Agent Detecting Barrier Creams" Emory Department of Chemistry, Proc. Erdec Sci. Conf. Chem. Biol. Def. Res. Pp. 393-399, November 1997.
BO	Rhule, et al., "New Polyoxometalate-TSPS for CW Agent Detection and Decontamination", Proc. Erdec Sci. Conf. Chem. Biol. Def. Res. Pp. 307-313, November 1998.
BP	Gall, et al., "Carbon Powder and Fiber-Supported Polyoxometalate Catalytic Materials. Preparation, Characterization, and Catalytic Oxidation of Dialkyl Sulfides as Mustard (HD) Analogues), Chemistry of Materials, Vol. 8, No. 10, pages 2523-2527 (1996).
BQ	Katsoulis, "A Survey of Applications of Polyoxometalates", Chem Rev., 98, pages 359-387 (1998).
BR	Hill, et al., "Carbon Powder and Fiber-Supported Polyoxometalate Catalytic Materials. Preparation, Characterization, and Catalytic Oxidation of Dialkyl Sulfides Mustard (HD) Analogues), Chemistry of Materials, Vol. 8, No. 10, pages 2523-2527 (1996).
BS	Riedel, "Light-Fastness of Pigments in Standard Color Depths," <i>Farbe Lack</i> , 74(4).

* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

EXAMINER'S SIGNATURE:

DATE CONSIDERED:

Patent and Trademark Office; U. S. DEPARTMENT OF COMMERCE